

its use may be it is impossible to state at present, but that it plays some important part in the economy of the Marsupial can hardly be doubted.

The appearance of the patch of integument is not unlike that figured by Garrod¹ in *Dorcopsis luctuosa*, but its position is very different in the two forms.

With this possible exception I am not able to compare the glandular patch of *Myrmecobius* to any structure in any other Marsupial; the result of the present paper therefore must be the addition of a new character to the diagnosis of *Myrmecobius*.

3. Studies in the Holothuroidea.—VI. Descriptions of new Species. By F. JEFFREY BELL, M.A., Sec. R.M.S., Professor of Comparative Anatomy and Zoology in King's College².

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(Plate XLV.)

During the somewhat protracted period in which I have been engaged in determining the large collection of Holothurians in the British Museum, I have noticed a few species of no interest sufficient to justify immediate description, but which, being as yet undescribed, may (on the completion of my work) have their characteristics published. The date on which this paper is read will explain why some of the species are named as they are.

CUCUMARIA SANCTI-JOHANNIS, sp. nov. (Plate XLV. fig. 1.)

Body considerably elongated; suckers highly retractile, confined to ambulacra and arranged in irregular double rows; no anal teeth.

Calcareous œsophageal ring greatly reduced, the radial piece small, slightly notched posteriorly, completely covered by the insertion of the retractor muscle; the interradial piece a fine filament. The retractors of extraordinary length, extending along two thirds of the whole length of the body, with a broad belly of insertion and long tendon-like band of origin. Stone-canal and several Polian vesicles long. The genital tubes long, simple, and numerous; the Cuvierian organs are apparently wanting.

The spicules (Plate XLV. fig. 1) are numerous and exceedingly simple; at the narrow end there is a tendency to produce a spine; spicules of various stages are shown in the figure.

Two specimens, measuring 50 and 95 millim. respectively, appear each to have a greatest width of about 13 millim.

Ojica, Goto Islands. Collected by Capt. St. John, R.N., H.M.S. 'Sylvia.'

This species is really remarkable; not only for the reduction of the œsophageal ring, which, it may be remembered, is quite aborted in

¹ P. Z. S. 1875, p. 48, pl. viii.

² P. Z. S. 1884, p. 563.

Amphicyclus japonicus, but for the great length of the retractor muscles; though these prolonged bands have a tendinous appearance, they are of the same histological structure as the more obviously muscular part.

CUCUMARIA BICOLOR, sp. nov. (Plate XLV. fig. 2.)

Body irregularly pentagonal, tapering slightly at its hinder end; no anal teeth; distinctly marked off into ambulacral regions which are quite white, and interambulacral regions which are chocolate or black; the ambulacra very wide, the suckers arranged irregularly, but in more than two rows; the bivial are narrower than the trivial ambulacra; the suckers are strictly confined to the ambulacra.

The state of contraction is such as to make a complete description of the internal anatomy impossible, but it may be noted that the integument is thick, the calcareous œsophageal ring fairly well developed, the interradial piece ending in a dagger-shaped process, and the radial being about twice as wide as the interradial; the genital tubes are numerous.

The spicules are few in number and small in size; the spine of the turiform bodies is bifurcated at its free end.

Length 36; 25 millim.; greatest breadth 20; 12 millim.

King Sound, W. Australia.

This species seems to be most closely allied to *C. versicolor*, from which it differs in the absence of ambulacral papillæ.

CUCUMARIA INCONSPICUA, sp. nov. (Plate XLV. fig. 3.)

Small, stout, a little rough to the touch, with the suckers not quite definitely limited to the ambulacra, though very often nearly so; the trivial suckers are in four and the bivial in two fairly regular rows. No anal teeth. The pharyngeal ring large, the muscles stout and inserted at once into the body-wall; the ring appears to be made up of fine sets of equal pieces, formed probably by the equal radial and interradial calcifications; the Polian vesicle is large.

The genital tubes are long, simple, and not numerous.

The spicules are rare, and are only in the form of large deposits of the shape shown in Plate XLV. fig. 3.

Colour varying shades of dark slate or brown.

Average length 17 millim., average greatest breadth 6 millim.

Port Phillip Heads. Collected by J. B. Wilson, Esq.

The irregularity of the arrangement of the suckers of this species appears to afford a strong argument against the division of the genus *Cucumaria* into *Cucumaria* s. str. and *Semperia*, which has been proposed by Lampert.

HOLOTHURIA (BOHADSCHIA) WHITMÆI, sp. nov. (Plate XLV. fig. 4.)

This is a large *Holothuria* with a stellate anus, and deposits not irregular rosettes, but stout basket-like knobbed bodies.

The body is flattened (in spirit); no dorsal papillæ or suckers; the ventral surface is thickly packed with suckers. Mouth ventral

anus distinctly five-rayed, with several hard papillæ along each ray, which look almost like the "teeth" of *Actinopyga*. The body-wall is pretty thick, and, in the specimen dissected, was for 30 millim., at a distance of 40 millim. from the anterior end, particularly thick.

It is impossible, from the condition of the specimen, to describe fully the internal anatomy, but the tentacular ampullæ were seen to be long, the œsophageal ring to be moderately developed, the radial pieces having a deep anterior notch. The Cuvierian organs are small or absent.

The spicules are numerous, very thick, basket-like spheres with small holes and prominent knobs (Plate XLV. fig. 4).

Colour black.

The two specimens measure respectively 240 millim. by 100 millim. and 185 millim. by 95 millim.

Hab. Samoa. Collected and presented by Rev. S. J. Whitmee.

HOLOTHURIA (BOHADSCHIA) INERMIS, sp. nov.

A species distinguished by the absence of spicules and calcareous ring.

Body elongated, tapering somewhat at either end; suckers very thick in trivium, scattered and much rarer in bivium; three indistinctly marked trivial rows; about the middle of the trivium the suckers less closely packed than at either end. Anus five-rayed, the sides of the rays with papillæ.

Twenty black tentacles; pharynx quite devoid of œsophageal ring; no calcareous deposits.

Colour dark brown, the suckers and tentacles still darker.

Hab. West Indies.

In order to retain the general form of the single complete specimen, I have not made a complete dissection; fortunately, however, there is an anterior end of a second specimen, and by it I have been able to assure myself that the absence of the calcareous ring is not an individual peculiarity.

HOLOTHURIA KAPIOLANIÆ, sp. nov. (Plate XLV. fig. 5.)

Body elongated, soft to the touch, covered with suckers, more numerous below than above, scattered quite irregularly; obscurely marked papillæ round the anus. Œsophageal ring of ordinary type, the pieces simple and low, with a rather deep notch posteriorly; stone-canal not remarkably long; two Polian vesicles; genital tubes short and not numerous; Cuvierian organs absent or poorly developed. The spicules merely in the form of delicate, slightly curved, very spiny rods.

Colour brownish grey, lighter below; with two rows of eight or nine dark patches on either side of the back.

The single specimen is 60 millim. long, and has an average width of 10 millim.

Hab. Sandwich Islands. 1850.

This species appears to be most closely allied to *H. erinaceus*, from which, however, the much smaller stone-canal and the very differently formed spicules are sufficient to distinguish it.

HOLOTHURIA SÆCULARIS, sp. nov. (Plate XLV. fig. 6.)

Body elongated, stout, covered with scattered spicules, which are not numerous and not much more common on the ventral than the dorsal surface. Mouth slightly ventral in position.

The body-wall is very thick (as much as 6 millim.) and is somewhat wrinkled in spirit; the stone-canal is as much as 34 millim. long; there is one Polian vesicle; the pieces of the œsophageal ring are stout and deep; the genital tubes arborescent. Cuvierian organs appear to be absent. The spicules are numerous, small, with well-marked knobs, and ordinarily three pairs of holes; there are no turri-form bodies.

Colour light stone speckled with white.

135 millim. long; 45 millim wide.

110 millim. long; 40 millim. wide.

Angola.

The apparently complete absence of turri-form bodies from among the deposits of this species is remarkable.

HOLOTHURIA VICTORIÆ. (Plate XLV. fig. 7.)

Body elongated, tapering a little posteriorly, soft to the touch; suckers closely packed in middle ventral line, rarer at sides and above. Mouth ventral.

The radials of the œsophageal ring with a semicircular notch; large Polian vesicle; stone-canal 36 millim. long; body-wall rather thick. The genital tubes, digestive tract, and possibly the Cuvierian organs have been ejected.

Turri-form bodies numerous; base with four central large and a varying number of smaller holes; spire with only one transverse bar; no flat plates or supporting spicules.

Colour light brown above, lighter below.

Length of single specimen 137 millim.; greatest breadth 34 millim.

The locality given is "Australian seas"; as the specimen was purchased from Dr. Bowerbank, it is possible that the exact locality was Fremantle, W. Australia, whence Dr. Bowerbank did receive a large number of specimens.

In the key given by Dr. Lampert this new form will stand with *H. intestinalis* and *H. magellani*; from the latter it may at once be distinguished by not having the suckers arranged in rows, and from the former by the form of the spicules.

EXPLANATION OF PLATE XLV.

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| Fig. 1. | Characteristic spicules of | <i>Cucumaria sancti-johannis</i> . |
| 2. | " | " <i>C. bicolor</i> . |
| 3. | " | " <i>C. inconspicua</i> . |
| 4. | " | " <i>Holothuria whitmæi</i> . |
| 5. | " | " <i>H. kapiolaniæ</i> . |
| 6. | " | " <i>H. sæcularis</i> . |
| 7. | " | " <i>H. victoriæ</i> . |

Fig. 4 is magnified 330, fig. 6 440, the others 220 diameters.